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Wiki Synthesis Extra-Credit

1. 2-bromopropane with Mg reacts with diethyl ether to form Grignard reagent.
2. Grignard Reagent with 2-methylpropanal reacts with H+ to form OH.
3. OH reacts with Potassium Permanganate and it is oxidized to a ketone.
4. The ketone and the triphenyl phosphonium ylide (Wittig Reagent) react to form an alkene.

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| Grignard noted that alkyl halides react with magnesium metal in diethyl ether (Et2O) to form compounds that contain a metal-carbon bond. Because carbon is considerably more electronegative than magnesium, the metal-carbon bond in this compound has a significant amount of ionic character. **Grignard reagents** are best thought of as hybrids of ionic and covalent Lewis structures. Grignard reagents are our first source of **carbanions**. The Lewis structure of the CH3- ion suggests that carbanions can be Lewis bases, or electron-pair donors. Grignard reagents are therefore sources of a nucleophile that can attack the + end of the C=O double bond in aldehydes and ketones. The **Wittig Reaction** is a chemical reaction of an aldehyde or ketone with a triphenyl phosphonium ylide (often called a **Wittig reagent**) to give an alkene.   1. L.G. Wade Jr. Organic Chemistry 7th edition. (Upper saddle River New York Pearson/Prentice Hall 2010) 2. Ricardo Feltre. Quimica Organica Volume 3. (Editora Moderna – Sao Paulo, Brazil 2010) 3. Wikipedia. <http://en.wikipedia.org/wiki/Wittig_reaction> 4. Grignard Reagents. <http://chemed.chem.purdue.edu/genchem/topicreview/bp/2organic/grignard.html> |  |  |
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